

Europäisches Patentamt
European Patent Office
Office européen des brevets



(11) Publication number:

0 417 855 A1

(12)

EUROPEAN PATENT APPLICATION

(21) Application number: **90202398.5**

(51) Int. Cl.⁵: **A61J 7/04, B65D 83/04**

(22) Date of filing: **10.09.90**

(30) Priority: **15.09.89 EP 89202365**

(43) Date of publication of application:
20.03.91 Bulletin 91/12

(84) Designated Contracting States:
AT BE CH DE DK ES FR GB GR IT LI LU NL SE

(71) Applicant: **AKZO N.V.**
Velperweg 76
NL-6824 BM Arnhem(NL)

(72) Inventor: **Ouwerkerk, Conny**
Pleinweg 100B
NL-3083 EK Rotterdam(NL)

(74) Representative: **Hermans, Franciscus G.M. et al**
Patent Department AKZO N.V. Pharma
Division P.O. Box 20
NL-5340 BH Oss(NL)

(54) **Compartmentalized container for a plurality of small articles.**

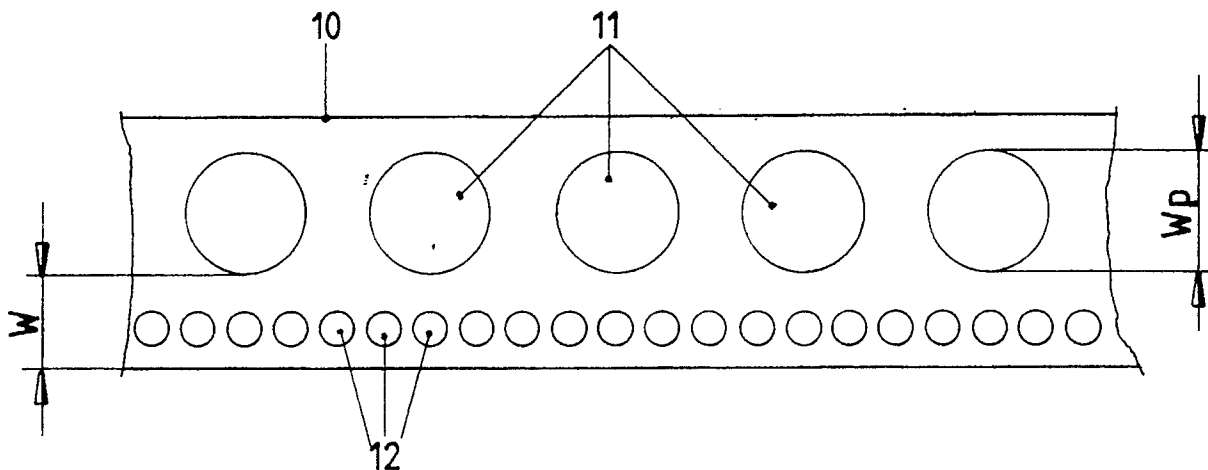
(57) The invention relates to a container with a plurality of compartments, especially capsules or pills.

More specifically it relates to a container for oral contraceptives.

The invention resides in an oblong strip with a

single row of pockets forming compartments for said pills and which strip is provided with means enabling time adjustment.

Fig. IV



EP 0 417 855 A1

COMPARTMENTALIZED CONTAINER FOR A PLURALITY OF SMALL ARTICLES

The invention relates to a compartmentalized container for a plurality of small articles, more particularly to such containers for pharmaceutical articles such as pills and capsules.

The invention is especially concerned with compartmentalized containers for oral contraceptives.

Containers for oral contraceptives have been proposed in a variety of different designs.

They range from conventional strips with pockets arranged in a circle or rectangle or other sequence to completely automated dispensers (see for instance U.S. patent no. 4,789,309).

One of the main problems in providing containers for oral contraceptives is the indication of the date or time at which a certain pill or capsule has to be taken.

Oral contraceptives have to be taken at regular intervals, usually daily, during a cycle of about 10-30 days. Because oral contraceptives are intended for selfadministration, mistakes such as taking the wrong pill should not be possible and forgotten administrations should be noticed at the next administration.

Particularly in the case of bi-phasic or tri-phasic regimes these mistakes should be avoided.

The solutions to these problems suggested so far have been either inadequate or disproportionately expensive (e.g. the automated dispensers).

The invention provides a simple and adequate container with which mistakes are practically impossible and forgotten administrations will always be noticed.

The invention relates to a container with a plurality of compartments preferably at least seven, each of which comprises a pill, particularly an oral contraceptive pill or capsule, characterized in that the container is formed by an oblong strip with a single row of pockets forming compartments for said pills, and in that the strip is provided with means, particularly contact or coupling means, capable of enabling time adjustment. A simple embodiment of the container according to the invention is characterized in that said contact or coupling means are formed by a series of marks, particularly holes, corrugations, undulations, projections, indentations, perforations, notches, studs, ribs, teeth or other grippable means. Preferably according to the invention said contact or coupling means are provided on strip portions on one or on either side of said row of pockets.

According to a preferred embodiment of the invention said contact or coupling means, which are provided on a strip portion having a width W , have a value greater than $0,20 \times W_p$ with a maxi-

mum of $5 \times W_p$ preferably about $1,5 - 2,5 \times W_p$.

An advantageous embodiment of the container according to the invention is characterized in that said contact or coupling means are provided for cooperation with cog-wheel and said time indication adjustment relates to different days of the week.

The invention also resides in a container which comprises an oblong strip with pockets for single articles in a single row and an indication of the time or date which is adjustable after the removal of every next single article in the row of pockets.

Preferred are containers where the indication of the time or date is provided on a cog-wheel of which the projections fit around individual pockets on the strip.

After each administration the cog-wheel can be transported to the next pocket, thereby indicating the time or date of the next administration. In the case of oral contraceptives, which usually involves daily administrations of a single pill or capsule, this invention is especially useful when the strip comprises at least seven pockets, the cog-wheel has seven projections, and the indication represented on each projection is a different day of the week.

Of course, the days of the week should be represented in their normal sequence.

If, as in the case of oral contraceptives, menopausal preparations or other prolonged administration regimes, the strip must contain more than 7-10 small articles, it is preferred that the strip be folded after every 5-10 pockets in order to improve ease of handling.

Preferably the strip is folded in equal lengths in such a way that the pockets of each equal length fit within the space between two pockets on an opposite equal length.

Whereas in an unfolded strip a symmetrical cog-wheel will suffice, because it is possible to have equal distances between the pockets, the cog-wheel for the folded embodiment must be asymmetrical (as shown in fig. IIIc) in order to be able to travel the greater distance over the folds.

Preferably the compartmentalized container will be placed in a casing, thus providing a dispenser.

Of course, the indication of the date or time must be visible through the casing. Also, the cog-wheel should be provided with a means of transportation outside the casing.

The casing should also have a starting area for the cog-wheel in which said cog-wheel can rotate freely, so that it can be set at the starting date or time. As soon as the first removal of an article has taken place and the cog-wheel is transported to the next pocket, such rotation of course must not be allowed to occur anymore.

For different small articles different strip materials and ways of removing the articles from the pockets in the strip may be chosen. For pharmaceutical articles such as pills or capsules the usual materials may be chosen.

Preferred are strips which comprise a (transparent) polymeric material with pockets, sealed with a sheet of aluminium, which aluminium is provided with a thin layer of polyethylene or some other polymer, to enable sealing to take place.

The casing may be a single use casing, or it may be refilled with new strips according to the invention. If a single use casing is chosen, it is preferred that it be made from a material which will not be damaging to the environment after being discarded from the dispenser.

A suitable material would be cardboard.

The invention will be further described with reference to the accompanying schematic drawing.

In figure I a strip according to the invention is represented. The strip (1) is provided with pockets (2), which are placed on one side of the strip in order to enable a cog-wheel to be transported along them along the broad side of the strip.

Fig. IIa gives one possible way of folding the strip according to the invention. The preferred folding method is represented in fig. IIb.

In figs. IIIa and IIIb strips are shown with a cog-wheel according to the invention.

In fig. IIIC the preferred cog-wheel, which is able to bridge the distance over the folds of the strip, is shown.

The date or time will be shown on the part of the cog-wheel which is visible next to the pill through the opening in the casing.

Fig. IV shows a top view of part of another embodiment of the container according to the present invention. The oblong strip 10 comprises a plurality of pockets 11 positioned in a single row. Each pocket contains an oral contraceptive pill or capsule. The width of the pills and the pockets in crosswise direction of the strip 10 or row is substantially the same and is indicated with W_p .

The strip portion W on one side of said row of pockets 11 is provided with a number of holes or bores 12 forming said contact or coupling means. The latter contact or coupling means in the form of bores 12 are provided for cooperation with a cog-wheel (not shown for this embodiment), which can be mounted in a suitable casing for a dispenser (not shown). Rotation of the cog-wheel enables time indication adjustment relating to different days of the week. Said strip portion W has a width W, which is greater than 0,20 W_p . Because of the difference in width between the strip portions on either sides of the row of pockets 11, the strip 10 is asymmetrical.

Fig. V shows a top view of part of still another

embodiment of the container according to the present invention. The oblong strip 13 again comprises a plurality of pockets 14 positioned in a single row, with each pocket containing an oral contraceptive pill or capsule. The width of the pills and pockets in crosswise direction of the strip 13 or row is substantially the same and is indicated with W_p . The strip portions W on either side of said row of pockets 14 are each provided with a number of notches 15 forming said contact or coupling means.

The latter contact or coupling means in the form of notches 15 are provided for cooperation with a cog-wheel (not shown for this embodiment), which can be mounted in a suitable casing for a dispenser (not shown). Rotation of the cog-wheel enables time indication adjustment relating to different days of the week. Because of the equal width of the strip portions W on either side of the row of pockets 14, the strip 13 is symmetrical.

Fig. VI is a perspectival view of another slightly modified embodiment of the container according to the present invention. Again the oblong strip 16 comprised a plurality of pockets 17, which each contain an oral contraceptive pill. The strip portions on either side row of pockets 17 are provided with notches 18 forming said contact or coupling means capable of enabling time adjustment, e.g. by means of a cog-wheel (not shown).

Claims

1. A container with a plurality of compartments, preferably at least seven, each of which comprises a pill, particularly an oral contraceptive pill or capsule, characterized in that the container is formed by an oblong strip with a single row of pockets forming compartments for said pills, and in that the strip is provided with means, particularly contact and/or coupling means, capable of enabling time adjustment.
2. A container according to claim 1, characterized in that said contact and/or coupling means are formed by a series of marks, particularly holes, corrugations, projections indentations, notches, studs, ribs, perforations, teeth or other grippable means.
3. A container according to claim 1, characterized in that said contact and/or coupling means are provided on the strip portion on at least one side of said row of pockets.
4. A container according to claim 3, characterized in that said contact and/or coupling means are provided on the strip portions on either side of said row of pockets.
5. A container according to claim 3, characterized in that said contact and/or coupling means are

provided on a strip portion having a width W which has a value greater than $0,20 \times W_p$, W_p being the maximum width of the pills in crosswise direction of said row.

6. A container according to claim 5, characterized in that said width W has a maximum value of $5 \times W_p$, preferably about $1,5 - 2,5 \times W_p$. 5

7. A container according to claim 1, characterized in that said contact and/or coupling means are provided for cooperation with a cog-wheel. 10

8. A container according to claim 1, characterized in that said time indication adjustment relates to different days of the week.

9. A dispenser for small articles, characterized in that it comprises the container according to claim 1. 15

10.A compartmentalized container for a plurality of small articles, particularly oral contraceptive pills, characterized in that it comprises an oblong strip with pockets for single articles in a single row and an indication of the time or date which is adjustable after the removal of every next single article in the row of pockets. 20

11.A compartmentalized container according to claim 10, characterized in that the indication of the time or date is provided on a cog-wheel of which the projections fit around individual pockets on the strip. 25

12.A compartmentalized container according to claim 11, characterized in that the strip comprises at least seven pockets, the cog-wheel has seven projections, and the indication represented on each projection is a different day of the week. 30

13.A compartmentalized container according to any of the preceding claims, characterized in that the oblong strip is folded in several equal lengths comprising 5-10 pockets. 35

14.A compartmentalized container as in claim 13, characterized in that the pockets of each equal length fit within the space between two pockets on an opposite equal length. 40

15.A dispenser for small articles, characterized in that it comprises a compartmentalized container according to any one of the preceding claims 10-14, which is placed within a casing. 45

50

55

Fig. I

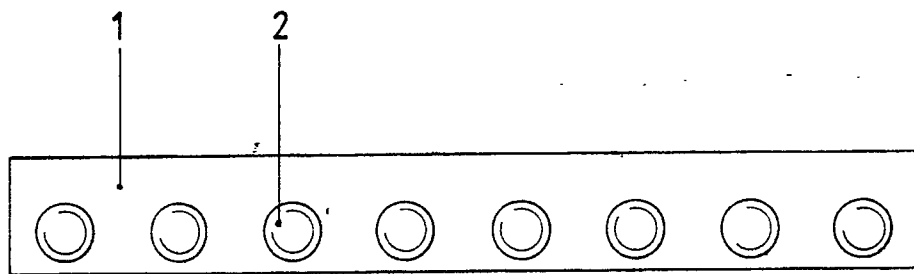


Fig. IIa

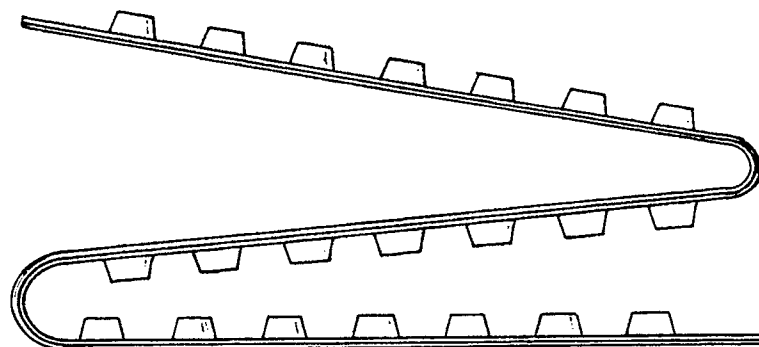


Fig. IIb

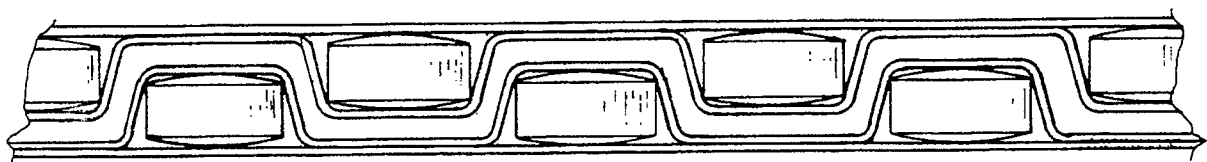


Fig. IIIa

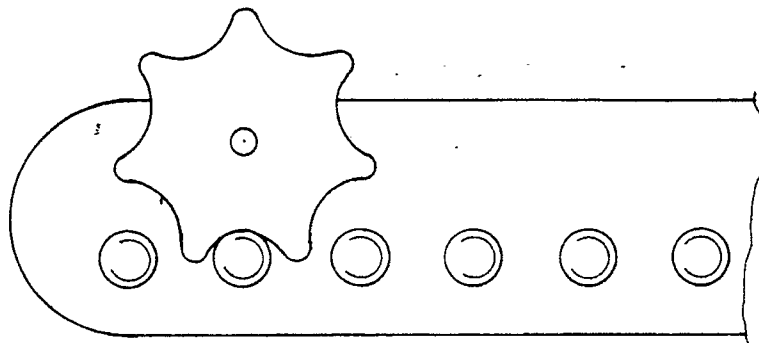


Fig. IIIb

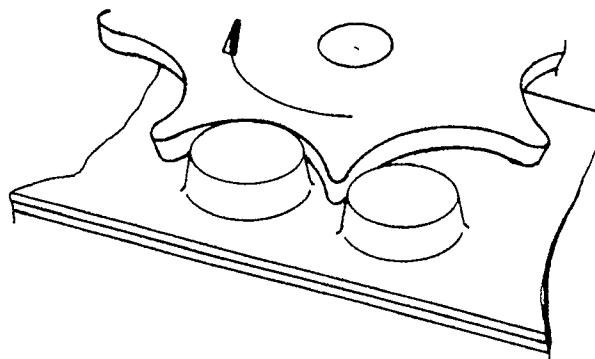


Fig. IIIc

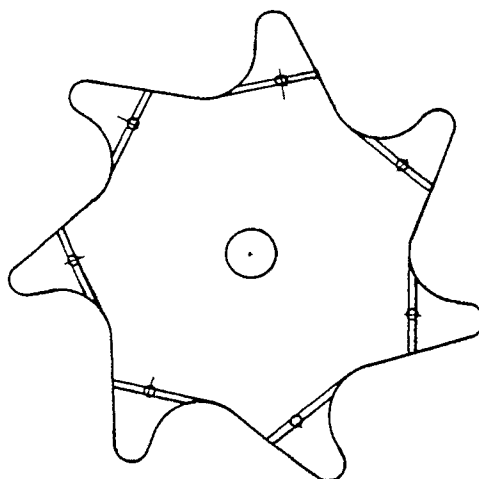


Fig. IV

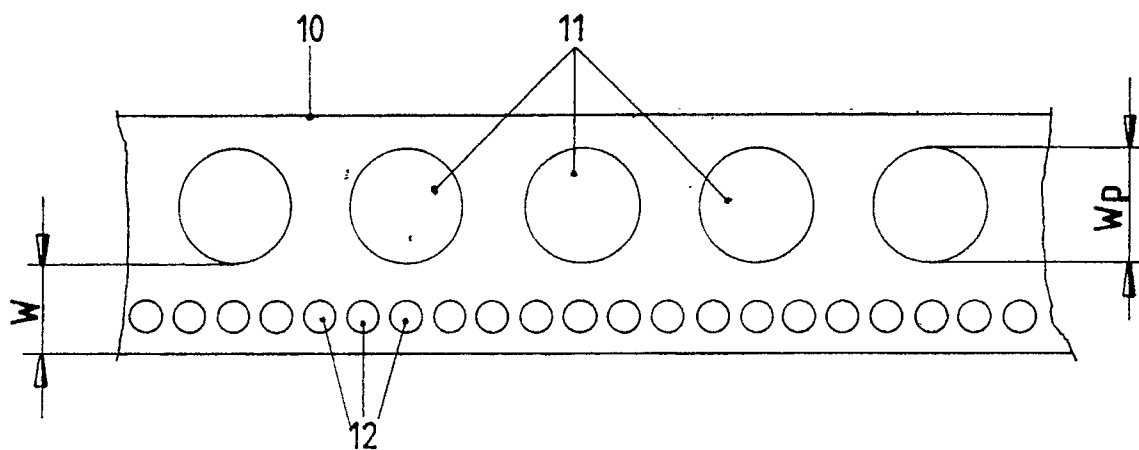


Fig. V

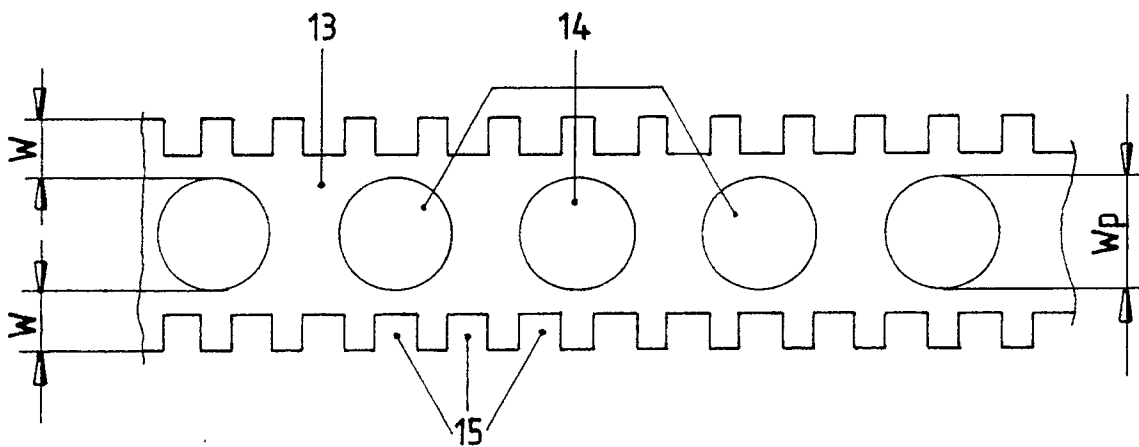
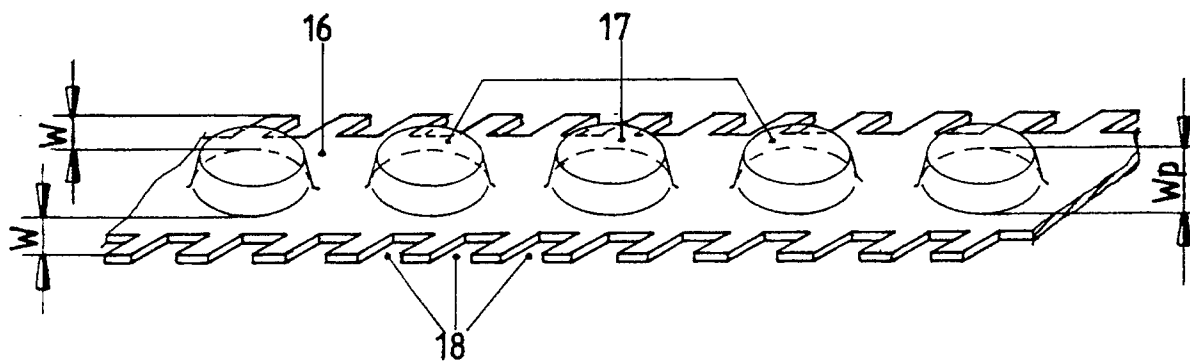


Fig. VI





European
Patent Office

EUROPEAN SEARCH REPORT

Application Number

EP 90 20 2398

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
A	EP-A-0 315 951 (WARNER-LAMBERT CO.) * Claims 1,6; figures 1-10 * - - - -	1,10,11, 15	A 61 J 7/04 B 65 D 83/04
A	US-A-3 367 535 (TANGAY) * Colum 3, lines 56-59; figures 1-4 * - - - -	1,10-12, 15	
A	GB-A-2 079 250 (BEECHAM) * Figures 1-4 * - - - -	1,10,13, 15	
A	US-A-4 398 635 (HIRT) * Figures 3-5 * - - - -	2	
A	GB-A-2 064 464 (WAN-SHUILIN) * Figure 3 * - - - -	2	
A	US-A-4 340 141 (FISCHER) * Figures 1-4; claim 1 * - - - - -	13-15	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int. Cl.5) A 61 J B 65 D
Place of search The Hague		Date of completion of search 26 October 90	Examiner GODOT T.G.L.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			